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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,679	09/14/2001	Ryoichi Okamoto	F-7158	8889

7590
Jordan & Hamburg
122 East 42nd Street
New York, NY 10168

07/30/2004

EXAMINER

BHAT, NINA NMN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/936,679	Applicant(s) OKAMOTO ET AL.	
	Examiner N. Bhat	Art Unit 1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-14 and 17-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 15-16 is/are rejected.
- 7) ☒ Claim(s) 7-14 and 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3-26-04, 9-22-2003</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 7-14 and 17-20 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend from another multiply dependent claim. See MPEP § 608.01(n). Accordingly, the claims 7-14 and 17-20 have not been further treated on the merits.
2. Claims 15-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 15 and 16 the recitation of "a heating gas supplier...for heating the superheated steam generator." is not worded properly applicant should recite that the heating gas supplier used for generating the superheated steam includes a fuel, which is admixed with the carbides and combusted to heat the water to provide the superheated steam. It is unclear from claim 15 and 16 what applicant means and further the wording is awkward. Suitable correction is required.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
4. Claim 1 and 15 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 00/52113.

WO 00/52113 [note the English translated WIPO document EP 1 180 542] teaches a method and apparatus for treating wastes such as raw garbage, waste lumber, paper diapers, waste plastics, organic sludge, common household trash which is exposed to high temperature steam in an oxygen free state to carbonize the waste the process utilizes a superheated steam generated from a steam generator or boiler, which is then subjected to the waste in a vessel which is equivalent in function to applicant's dry distillation and volume reduction vessel, and further provides a heating gas supply means for heating the steam generator.[Note abstract]

5. Claim 1 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by GB 1 507 138.

GB 1507138 teaches a method and apparatus for thermally cracking an organic solid waste with superheated steam obtained from a superheated steam generator of the internal heating type and recycling the water recovered by condensing the resulting cracked product and steam for use as a source of water for the steam generator. GB 1507138 specifically teach a superheated steam generator for generating a super heated steam, a vessel which houses the waste tires to be treated which functions equivalently to the dry distillation and volume reduction vessel and a heat gas supplier for supply gas to the steam generator to generate the steam which is used in the thermal cracking of the rubberized waste.

6. Claims 1 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-015635.

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JP 2000-015635 teaches a method and apparatus for destroying plastic wastes, which contain chlorine such as polyvinyl chloride containing plastics. The apparatus includes a crusher for crushing the waste plastic to a particle size of predetermined size. A preheater for preheating the crushed waste and a dechlorination furnace which is functionally equivalent to applicant's dry distillation and volume reduction vessel wherein there are means which introduces the ground and comminuted plastic into the vessel, and means to introduce a superheated steam in a substantially no oxygen atmosphere, further includes are means for separating the pyrolysis into an exhaust gas and dechlorinated solids which is then cooled and treated with water which removes the inorganic solids. There are means provided which generate the superheated steam and means to heat the boiler or steam generating means.

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 2-6 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/52113 in view of JP 2000-015635.

WO 00/52113 teaches the invention substantially as claimed. [Note the English translation of the WIPO document EP 1180542] WO 00/52113 teaches a waste treating apparatus and method, which exposes organic containing materials to superheated steam at a temperature of 510-900°C in an oxygen free state preferably while being stirred to so that the waste is carbonized. The amount of waste is reduced with no fear of generating harmful substances like dioxin and the carbonized waste can be used or recycled in fuel applications. The disposal vessel body (32) can be operated in a closed state after a predetermined amount of wastes is charged into the vessel and further includes a discharge port (35) for discharging carbonized wastes at the bottom of the vessel thereof. The disposal vessel is also provided with a gas discharge port (36) for discharging exhaust gas containing steam from the disposal vessel body to the cooler at the upper side thereof. The stirrer (33) has a pair of rotating shafts, which are driven by two motors. While the rotating shafts (40 and 41) are rotated in the same direction, wastes in the disposal vessel body (32) move in the axial direction of each of the rotating shafts (40 and 41) and the movement direction is reverse to each other. High temperature steam is blown through the high temperature steam supply sections (343) supplied into the disposal vessel body (32) so that carbonization can be accomplished. While the high temperature steam is blown in; exhaust gas from the reaction is sent to the cooler through the gas discharge port (36) and disposed of by the oil separator (15) and water purifier (17) to recover water and oil. After carbonization is completed,

cooling steam is introduced through the supply port to decrease the temperature of the carbonized solids. [Note Column 5, line 29 to Column 6, lines 1-37].

However, WO 00/52113 does not teach a preheater or dryer which dries the waste prior to superheated steam carbonization.

JP 2000-015635 teaches a method and apparatus for dechlorinating waste containing organic chlorine compounds such as plastics containing polyvinyl chloride, etc. An apparatus is provided which crushes the waste containing chlorine compounds to a prescribed size, and a preheater (14) for preheating the crushed waste, followed by providing a dechlorination furnace which is functionally equivalent to applicant's dry distillation and volume reduction apparatus wherein a high concentration of high temperature steam is introduced into the furnace which pyrolyzes or carbonizes the organic waste into an exhaust gas(19) and a carbonized solids (20), the exhaust gas is further separated and the steam is recycled back into the steam generator.[Note Page 5, Detailed description machine translation whole page. The dechlorination furnace is a rotary kiln type furnace such that the comminuted waste, which is preheated, is rotated while being subjected to superheated steam. The comminuting and preheating is done in order to improve the efficiency of the steam pyrolysis/carbonization reaction. [Note page 6, 1st paragraph]. Admittedly, JP 2000-015635 does not specifically teach that the preheater is a cyclone type composite flow drier, which is used to preheat the waste prior to introduction into the dechlorination furnace.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide an apparatus which includes a dry distillation and

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volume reduction apparatus for waste comprising a superheated steam generator for genera a superheated steam, a dry distillation volume reduction vessel for heating and subjecting the waste to a superheated steam to pyrolyze or carbonize the waste and further providing means for supplying fuel or gas to heat for generating the superheated steam, this is specifically taught both WO 00/52113 and JP 2000-015635. JP 2000-015635 teaches the concept of preheating the waste prior to subjecting the waste to the superheated steam or dry distillation and volume reduction apparatus. To use a specific type of drier for preheating such as has been claimed by applicant would have been obvious to one having ordinary skill in the art because the ordinary artisan and prior art teaches and recognizes in order to improve efficiency of the pyrolysis or carbonization reactions and overall efficiency of the apparatus it is important to improve the heat transfer and therefore, the art teaches preheating the waste prior to superheating steam pyrolysis and to use any type of heater for preheating or using a cyclonic type heater would have been obvious familiar in waste disposal absent criticality in showing. It is maintained that the art taken as a whole renders applicant's claims obvious.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Teng et al. teach a method and device for producing gasified substance and solid carbonized substances from dry distilling and splitting decomposition. JP 2001-165417 teach a waste burning system which includes a dry distillation gas generated from waste fuel by a dry distillation furnace which is feed into a gas fired combustor. JP 01-211435 teaches a process and apparatus for producing oil from waste plastic using dry distillation. JP 10-216674 teach subjecting chlorine

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containing plastic waste to dry distillation absorbing the hydrogen chloride gas produced by the dry distillation to water to collect, and incinerating the carbon residue after the dry distillation. JP 11223476 teaches a method and system for carbonizing organic matter using high temperature steam. JP 2000313884 teach a waste treating method where carbonized waste is made by treating wastes comprising one or more garbage, waste wood, diapers, plastic to high temperature steam in an oxygen less condition and carbonizing and using the carbonized waste as a fuel or other purposes. JP 11128870 teaches carbonization of waste using dry distillation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



N. Bhat

NINA BHAT
PRIMARY EXAMINER
GROUP 1300 1764